

Appl. No. 10/065,854
Amdt. Dated September 28, 2005
Reply to Office action of August 4, 2005

REMARKS / ARGUMENTS

In response to the Office Action dated August 4, 2005, Applicants respectfully request reconsideration based on the above claim amendments and the following remarks. Applicants respectfully submit that the claims as presented are in condition for allowance.

I. Status of Claims

Claims 1-57 are pending in the application and stand rejected. Applicants have amended Claims 34, 47, 52, 53, and 55, and canceled Claims 54, 56 and 57, leaving Claims 1-53, and 55 for consideration upon entry of the present Amendment.

Applicants respectfully submit that the rejections for a provisional obviousness-type double patenting have been obviated, and the rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

II. Double Patenting Rejections

Claims 1 – 57 stand rejected under a provisional obviousness-type double patenting over copending U.S Application No. 10/063,819. A Terminal Disclaimer obviating this double patenting rejection is filed herewith.

III. Claim Rejections under 35 U.S.C. §102(b)

Claims 1, 5-8, 13-15, 17, 18, 23, 34, 35, 42, and 45 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Giger et al. (U.S. Patent No. 6,205,348) hereinafter referred to as Giger.

Claims 47-51 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Nishikawa et al. (U.S. Patent No. 6,058,322) hereinafter referred to as Nishikawa.

Applicants traverse these rejections for the following reasons.

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Applicants respectfully submit that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*" *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the *** claim," *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Applicants have amended independent Claims 34 and 47 to now recite, inter alia,

"...employing a data source, the data source including a dual or multiple energy image set, the image set comprising a high energy image, a low energy image, a bone image, and a soft tissue image."

Dependent claims inherit all of the limitations of the respective parent claim. No new matter has been added as antecedent support for the amendments may be found in the specification as originally filed, such as at Paragraph [0052] and Figures 6-7 for example.

Applicants respectfully submit that independent Claims 1, 23, 28, 33, 34, 47, 52, 53 and 55 all contain the claimed element of a data source including an *image set*, specifically:

a high energy image, a low energy image, a bone image, and a soft tissue image (Claims 1, 34 and 47);

a first decomposed image, a second decomposed image, a high energy image, and a low energy image (Claims 23, 28 and 33);

image set of computed tomography images comprises acquiring an image set of dual energy computed tomography images (Claim 52);

the first energy images, second energy images, first decomposed images, and second decomposed images forming the image set (Claim 53 and 55).

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In alleging anticipation, the Examiner references Giger at column 7 lines 43-51 in an effort to show that Giger discloses high energy images, low energy images, "bone-cancelled" (soft-tissue) images, and "soft-tissue-cancelled" (bone) images. Paper 05042005, page 7 (reference to Claim 19).

Notwithstanding the language disclosed in Giger, Applicants respectfully submit that, as amended, Giger does not disclose a data source including a dual or multiple energy image set.

In Giger, Applicants finds disclosure of an energy subtraction technique for producing bone-cancelled images and soft-tissue-cancelled images. Column 7, lines 43-51. However, once the high-energy and low-energy images of Giger have been used for the energy subtraction technique, Giger is absent any disclosure of those same images now being available in an image set.

Contrary to the claimed invention, Applicants do not find Giger to disclose *an image set including a high energy image, a low energy image, a bone image, and a soft tissue image, or an image set including a first decomposed image, a second decomposed image, a high energy image, and a low energy image, or an image set including the first energy images, second energy images, first decomposed images, and second decomposed images, or an image set of dual energy computed tomography images.*

While Giger discloses certain elements of the claimed image set, there is no disclosure in Giger of each and every element of the image set, and therefore does not disclose *each and every element of the claimed invention arranged as claimed.*

Also contrary to the claimed invention, Applicants find Nishikawa to be absent any disclosure of each and every element of the claimed invention arranged as claimed in the present amendment.

Absent anticipatory disclosure in Giger or Nishikawa of each and every element of the claimed invention arranged as claimed, neither Giger nor Nishikawa can be anticipatory.

In view of the amendment and foregoing remarks, Applicants submit that the References do not separately disclose each and every element of the claimed invention arranged as claimed and therefore cannot be anticipatory. Accordingly, Applicants respectfully submit that the Examiner's rejection under 35 U.S.C. §102(b) has been traversed, and request that the Examiner reconsider and withdraw this rejection.

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Claims 47-51 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Nishikawa et al. (U.S. Patent No. 6,058,322) hereinafter referred to as Nishikawa.

In alleging anticipation, the Examiner references Nishikawa column 10, lines 4-5 in an effort to show that Nishikawa discloses *identifying a candidate region within a bone image which correlates to the region of interest in the soft tissue image*. Nishikawa, however, as best understood by applicants does not refer to a bone image at all but only to two separate regions, points p and p', within a *single soft-tissue image*. The description of exposures X and X' appear not be referring to separate radiographs, but to two areas of exposure on a *single radiographic image* corresponding to points p and p' as is shown in Figure 6B (note Figure 6B has, it appears, erroneously, left off the [''] notation on the lower p).

Further support from Nishikawa that there is only *one* soft-tissue (mammogram) image and *not a second (bone) image* utilized, can be found in column 8, lines 36-38, *one of the early steps in a computer-aided system is to segment a digitized radiographic image, such as a mammogram*.

Therefore, the claimed elements of *segmenting the region of interest from a background of the soft-tissue image; identifying a candidate region within a bone image which correlates to the region of interest in the soft-tissue image; extracting features from the candidate region in the bone image; and, classifying the region of interest in the soft-tissue image as a candidate for soft-tissue disease utilizing the features extracted from the bone image;* is not taught by Nishikawa.

Accordingly, applicants respectfully submit that rejection for obviousness of independent claim 47 is improper and is therefore allowable, as are all claims dependent upon claim 47.

IV. Claim Rejections under 35 U.S.C. §103(a)

Claims 2-4, 16, 19, 20, 24-27, 29-32 and 52-57 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Giger et al. (U.S. Patent No. 6,205,348) hereinafter referred to as Giger.

Claims 9-12, 21, 22, 28, 33, 36-41, 43, 44, and 46 stand rejected under 35 U.S.C. 103(a) as

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allegedly being unpatentable over Giger et al. (U.S. Patent No. 6,205,348) in view of Nishikawa et al. (U.S. Patent No. 6,058,322) hereinafter referred to as Nishikawa.

Applicants traverse these rejections for the following reasons.

Applicants respectfully submit that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Additionally, Applicants respectfully submit that if an independent claim is non-obvious, then any claim depending therefrom is non-obvious. MPEP §2143.03 referencing *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988).

Applicants have amended independent Claims 52, 53 and 55 to now recite, inter alia,
“...acquiring an image set of dual energy computed tomography images;” (Claim 52);

“...wherein acquiring the image set comprises acquiring first energy images at a first energy, acquiring second energy images at a second energy, different than the first energy, and processing first decomposed images and second decomposed images, the first energy images, second energy images, first decomposed images, and second decomposed images forming the image set; (Claim 53);

“...wherein acquiring the image set comprises acquiring first energy images at a first energy, acquiring second energy images at a second energy, different than the first energy, and processing first decomposed images and second decomposed images, the first energy images, second energy images, first decomposed images, and second decomposed images forming the image set;” (Claim 55).

Dependent claims inherit all of the limitations of the respective parent claim. No new matter has been added as antecedent support for the amendments may be found as follows: independent Claim 52 has been amended to incorporate the elements of Claim 57, subsequently Claim 57 has been withdrawn; independent Claim 53 has been amended to incorporate the elements of Claim 54, subsequently Claim 54 has been withdrawn; independent Claim 55 has

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been amended to incorporate the elements of Claim 56, subsequently Claim 56 has been withdrawn.

As discussed above regarding the rejections under 35 U.S.C. §102(b), Applicants remark that Giger and Nishikawa, are deficient in the disclosure of an *image set* comprising any of the image sets listed in Claims 1, 23, 28, 33, 34, 47, 52, 53 and 55.

Additionally, Applicants submit that Giger and Nishikawa, either singly or in combination, are deficient in any teaching or suggestion of each and every element of the claimed *image set* for the purpose of performing as the claimed invention performs, and therefore cannot properly be used to establish a prima facie case of obviousness.

At column 7 lines 43-51, Applicants find Giger to teach the use of high-energy images and low-energy images in an energy subtraction technique to arrive at a bone-cancelled image and a soft-tissue-cancelled image. Subsequent to this energy subtraction technique, Applicants find Giger to be completely silent on any further combining of the high-energy image, the low-energy image, the bone image, and the soft tissue image, into an *image set*.

Applicants further submit that Nishikawa fails to cure the deficiencies of Giger.

In view of the amendment and foregoing remarks regarding the rejections under 35 U.S.C. §102(b), Applicants submit that all dependent claims depend from these allowable independent claims and are therefore allowable for at least this reason.

In view of the foregoing, Applicants submit that Giger and Nishikawa, either singly or in combination, fail to teach or suggest each and every element of the claimed invention and disclose a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicants respectfully request reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicants consider to be traversed.

In light of the forgoing, Applicants respectfully submit that the Examiner's rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, and respectfully request that the Examiner reconsider and withdraw these rejections.

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V. Conclusion

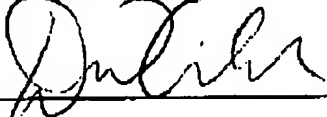
The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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Applicants' Attorneys

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